



STATEMENT OF BASIS

PROPOSED NO FURTHER ACTION DETERMINATION
FOR
SOIL AND GROUNDWATER

AT
ADVANCED ENVIRONMENTAL INC.

13579 Whittram Avenue
Fontana, California

EPA ID NO. CAT 080025711

April 2008

TABLE OF CONTENTS

1. EXECUTIVE SUMMARY	3
2. FACILITY BACKGROUND	5
2.1. Site Description	
2.2. Regulatory History	
2.3. Environmental Setting	
2.4. Hydrology	
3. RCRA FACILITY ASSESSMENT (RFA)	8
4. REMOVAL OF TANKS AND EQUIPMENT	9
5. RCRA FACILITY INVESTIGATIONS (RFI)	12
6. HUMAN HEALTH RISK ASSESSMENT	17
7. CONCLUSIONS	19
8. REFERENCES	20
LIST OF FIGURES	21
1. Site Location Map	
2. Corrective Action Process Flow Chart	
3. Location of Solid Waste Management Units and Areas of Concern	
4. Existing Facility Plot Plan	
5. Proposed Facility Plot Plan	
Table 1: AEI Tank and Structure Status	26

1. EXECUTIVE SUMMARY

The California Environmental Protection Agency, Department of Toxic Substances Control (DTSC) has prepared this Statement of Basis for the proposed “No Further Action (NFA)” determination for several Solid Waste Management Units (SWMUs) and Areas of Concern (AOCs) at the Advanced Environmental, Inc. (AEI, or “Facility”). These units include Western Tank Farm (SWMU-1), Southwestern Tank Farm (SWMU-2), Facility Sump Area (AOC-1), prior Soil Pile Area (AOC-2), and West Area behind the Facility (AOC-3). AEI is located at 13579 Whittram Avenue in the city of Fontana, San Bernardino County, California (Figure 1). The AEI facility was previously owned by Petroleum Industries, Lakewood Oil Company, then Petroleum Recycling Corporation (PRC). In 1995, AEI acquired the Facility from PRC.

The objective of the corrective action process at a hazardous waste management facility is to identify releases or potential releases of hazardous waste or constituents requiring further investigation. These further investigations evaluate the nature and extent of the releases and also identify, develop, and implement appropriate corrective measures to protect human health and the environment. Figure 2 is a schematic of the overall RCRA Corrective Action Process and shows the progression from a RCRA Facility Assessment (RFA), RCRA Facility Investigation (RFI), Remedy Selection, and Corrective Action Completion.

In March of 1991, DTSC issued an interim status document (ISD) to PRC for storage and treatment of petroleum wastes. Storage and treatment units included container storage areas, aboveground and underground storage tanks; the treatment included filtration, thermal and chemical gravity separation, atmospheric distillation, vacuum distillation, and centrifuge enhanced phase separation. As a condition of the interim status, AEI has been required to conduct soil and groundwater investigations under a Corrective Action Consent Agreement. Groundwater was not encountered during the investigation when drilling was made to the depth of 100 feet below ground surface. AEI completed the required soil investigations in July 2005, removed some regulated tanks, petroleum hydrocarbon contaminated asphalt/concrete, and assessed the risk of residual contamination identified in the subsurface soil. The Statement of Basis summarizes facility background, operation, investigation results, health risk assessment and rationale why DTSC proposes no further action for soil and groundwater at AEI.

DTSC has determined that the July 2005 RFI Report (“RFI Report”) is technically complete, and the residual contamination in soil that is below the USEPA industrial preliminary remedial goals does not pose any risk to onsite workers and offsite residents. However, the approval of a No Further Action (NFA) determination is subject to a 45-day public comment period. DTSC has prepared the Notice of Exemption for this project to comply with the California Environmental Quality Act (CEQA). At the end of the public comment period, DTSC will consider all comments and make a decision on the NFA Determination.

The RFI Report and the other project documents that were used as the source of information for this proposed determination are available for review at the following location:

Fontana Branch Library
16860 Valencia Avenue
Fontana, California 92335

DTSC
700 Heinz Avenue
Berkeley, California 94710

In addition, the RFI Report and the CEQA Notice of Exemption are also available online at <http://www.envirostor.dtsc.ca.gov/public/>

To be considered in the decision making for this Project, all comments on the proposed NFA Determination should be received, at the following address:

Waqar Ahmad, Project Manager
Department of Toxic Substances Control
700 Heinz Avenue, Suite 300
Berkeley, California 94710-2721

2. FACILITY BACKGROUND

2.1 Site Description

The AEI facility (AEI or Facility) is located in an area zoned as industrial by the City of Fontana. The Facility is located near the California Speedway, a commercial auto racing speedway, and is north of the Metrolink railroad tracks. The nearest residence is about ¼ mile from AEI. The nearest elementary school is 1.6 miles and the nearest day-care center is 2.4 miles from AEI. Hazardous wastes managed at AEI are primarily used oil, oily wastes, oily water, oily solids and used anti-freeze. The 4.3-acre Facility began operating under ownership of Petroleum Industries in the late 1960's as a collection and treatment center for used motor oil. Facility ownership was transferred to Lakewood Oil Company (Lakewood) in 1975 and to Lakewood Oil aka Base Oil Service in 1986. In September 1989, Lakewood sold the Facility to Petroleum Recycling Corporation (PRC). PRC continued operations until 1993.

In October 1995, AEI acquired PRC. In 1999 AEI decided that the Facility would operate only as a transfer and storage facility and applied for a Standardized Permit. The Standardized Permit was issued in November 2007, but has been appealed. The appeal decision is pending; therefore AEI is currently still operating under the interim status authorized by DTSC.

AEI is a subsidiary of DeMenno-Kerdoon (DK). Asbury Environmental Services (Asbury) also a subsidiary of DeMenno-Kerdoon (DK), a permitted hazardous waste transporter, is allowed to temporarily store liquid wastes in containers at the Facility for less than 10 days from date of receipt of waste prior to transfer offsite. The Asbury container storage area, as part of their hazardous waste transporter activity, is separate from any AEI storage area that is under authorization by DTSC.

2.2 Regulatory History

The Facility began operating in the late 1960's and early 1970's as a collection center of used motor oil. The collection center was owned and operated by Delbert Bronson and Theresa Garrett under the name of Lakewood Oil from 1979 to 1982. The collection center used heat to separate oil and water and produced a fuel oil. In 1982, the California Department of Health Services (DHS), the predecessor agency to DTSC, issued Lakewood Oil a variance to store and refine waste oil, treat and dispose wastewater generated at the site. In September 1989, the Facility was sold to the Petroleum Recycling Corporation (PRC).

On March 15, 1991, DTSC issued an interim status document (ISD) to PRC for treatment of petroleum wastes using filtration, thermal and chemical gravity separation, atmospheric distillation, vacuum distillation, and centrifuge enhanced phase separation. The facility operations included used oil, oily-water, fuel tank bottoms, oil filters, etc. The treatment objective was to remove water and sediments from the oil. The recycled oil was sold to the fuels market for further blending and alternative fuel.

In 1995, AEI acquired the Facility from PRC. In 1996, the ISD was modified to include used antifreeze.

On June 6, 1997, DTSC approved the replacement of the existing Wastewater Treatment System. However, DTSC rejected the addition of an ultraviolet oxidation unit. DTSC also rejected the relocation of tanks T409, S101, and T201.

In 1998, AEI filed for reorganization under Chapter 11 of the federal bankruptcy code. The Chapter 11 reorganization was approved and confirmed in August 1999.

In 1999, AEI decided the facility will operate only as a transfer and storage facility and applied to DTSC for a Standardized Permit. DTSC prepared a Draft Standardized Permit and received public comments in 2005. DTSC revised the Draft Permit and issued the Final Permit in November 2007 which allowed AEI to relocate five tanks and replace or install up to a total of 14 new tanks. The new waste tank farm will consist of nineteen (19) hazardous waste storage tanks with maximum permitted capacity of 472,560 gallons. The Final Permit however got appealed. The appeal decision is pending.

2.3 Environmental Setting

The AEI facility is located at the west end of the Upper Santa Ana Valley, on a broad alluvial plain within the Santa Ana River drainage. The valley is an extensive, down warped alluvial basin bounded on the north by the San Gabriel and San Bernardino Mountains, on the east by the San Jacinto Fault, on the south by the Jurupa Mountains and on the west by the Chino Fault. The present-day valley floor has been formed by numerous south-trending drainages, including San Antonio Creek, Cucamonga Creek, Deer Creek, Day Creek and Etiwanda Creek, which exit the nearby mountain block to the north and have deposited a series of thick coalescing alluvial fans. The alluvial deposits underlying the study area consist of an upper, unconsolidated unit of Holocene alluvium underlain by semi-consolidated terrace deposits and older alluvium of late Pleistocene age, reaching a combined maximum thickness on the order of 1,400 feet.

2.4 Hydrology

The site is situated three miles south from the base of the San Gabriel Mountains, on an alluvial apron created by coalescing drainages of Etiwanda Creek and Day Creek. Historically, natural drainage patterns across the alluvial apron trended from north to south, discharging heavy runoff from the nearby mountains into the north central portion of what is known as the Upper Santa Ana River Basin. However, the current hydrologic setting is controlled by engineered improvements that evolved with development of the Fontana area. Based on public records, the regional depth to groundwater beneath the facility is 400+ feet below ground surface.

Proximate to the Facility, surface drainage is generally west-trending, flowing towards the Etiwanda San Sevaine Flood Control Channel located approximately 1500 feet west

of the site. The principal features that control drainage outside the facility are Whittram Avenue along the north side and an unlined drainage channel that parallels the southeasterly property line. Consequently, surface runoff outside the facility does not influence drainage within the facility property. In summary, the facility is designed to neither receive nor discharge uncontrolled surface water runoff.

3. RCRA FACILITY ASSESSMENT

A RCRA Facility Assessment (RFA) was conducted in June 1993 at the Facility. The RFA identified five solid waste management units (SWMU-1 through 5) which are also regulated hazardous waste management units and three areas of concern (AOC-1 through 3) at the Facility where the release of hazardous waste or hazardous waste constituents was suspected. The SWMUs and AOCs are identified in Figure 3.

SWMU-1	West Tank Farm
SWMU-2	Southwestern Tank Farm
SWMU-3	Southern Tank Farm
SWMU-4	Tank Farm 551
SWMU-5	Tank Farm 501
AOC-1	Facility Sump Area
AOC-2	Soil underlying Soil Pile
AOC-3	West Area behind Facility

In 1996, DTSC entered into a Corrective Action Consent Agreement (Agreement) with AEI and required further investigation of SWMU-1, SWMU-2, SWMU-5, and all three AOCs. The Agreement identified four groups of hazardous waste and hazardous waste constituents that are of concern at the Facility. Those groups are petroleum hydrocarbons as Total Petroleum Hydrocarbons (TPH), metals (arsenic, cadmium, chromium, lead, and copper), aromatic hydrocarbons (toluene, xylenes, and ethyl benzene), and oil and grease. Additionally, during the RCRA Facility Investigation the Northwest Tank Farm (Tank Farm A -Tanks 1001 - 1005) and Underground Storage Tank Locations were identified as units requiring further investigation.

4. REMOVAL OF TANKS/EQUIPMENT

The Facility uses tanks to store products which are not regulated by DTSC, in addition to tanks/equipment to store hazardous waste. AEI removed some tanks prior to 2004 and plans to remove more tanks when the Facility installs new tanks.

4.1 Units Removed

Based on records and reports, ten (10) tanks were removed in 1990s. Those included Tanks T-301, T-302 from the Western Tank Farm; FRP-1, T-21A and T-204 from the South-western Tank Farm; S-521, S-531, and T-701 from the Processing Area; and T-23803 and T-23804 near the wastewater treatment units.

On May 15, 2002, AEI submitted the Partial Closure Plan for non-operational ISD tanks, equipment, and piping. The plan was revised on November 1, 2002. DTSC opened a 30-day public comment period to receive comments on the draft Partial Closure Plan. The public comment period ended on December 13, 2002. No comments were received. DTSC approved the Partial Closure Plan on December 17, 2002 and filed a Notice of Exemption in compliance with the California Environmental Quality Act (CEQA).

During the partial closure in 2003, AEI removed twenty-four (24) units including eight (8) industrial vessels and sixteen (16) tanks (see Figure 4 for tank locations). These included a distillation system with vessels VP-4, R-621, R-631, R-641, S-511, V-521, V-541, and V-551; a skid mounted wastewater treatment system; tanks T-201, T-202, T-203, T-205, T-206, T-351, T-352, T-401 through T-406, T-551, T-23801, and T-23802. In addition to the skid mounted wastewater treatment system, AEI removed fifty-one (51) other structures comprising piping and equipment during this partial removal phase.

As a result, AEI removed a total of seventy-six (76) non-operational regulated tanks, vessels and equipment; 2,440 pounds of aluminum were shipped for recycling; 82,660 pounds of insulation were removed from the former process area; 92,590 pounds of cement and 1,000 pounds of fiberglass from the floor of Tank T-206, were shipped offsite for disposal; and 56,871 gallons of oily water were transported to D/K for treatment and disposal.

AEI took soil samples below the West Tank Farm (SWMU-1) and Southwestern Tank Farm (SWMU-2) and noted that a layer of plastic sheeting was underneath the gravel blanket. Confirmation soil samples were taken, analyzed and found to contain only trace amount of the analytes. AEI did not take soil samples from SWMUs-3 through 5 and the soil investigation is deferred (see section 4.2 below). On July 25, 2003, AEI submitted 'Closure Certification Report, Phase I Partial Closure', dated July 2003.

4.2. Units to be removed:

DTSC has determined that the investigation and cleanup of hazardous waste and waste constituents from the following units will be done as part of the closure activities when the Facility installs new tanks:

1. Used Oil Tanks T-1001, T-1002, T-1003, T-1004, and T-1005
2. Used Oil Tanks T-451, T-452, T-453, and T-454
3. Used Antifreeze Tank T-501
4. Oily Water Tanks T-651 and T-652
5. Used Oil Storage Tanks V-511, V-512 and V-513
6. SWMU-3 – Southern Tank Farm: This tank farm used to have twelve tanks. Currently, there are eight tanks in operation in this area. DTSC has determined that the investigation and cleanup of hazardous waste and constituents will be done when the Facility installs new tanks.
7. SWMU-4 – Tank Farm 551: This tank farm contained only one tank, T-551, which has been closed since the approved closure plan in 2003. The investigation and cleanup of hazardous waste and constituents will be done when the Facility installs new tanks.
8. SWMU-5 – Tank Farm 501: This tank farm used to contain two tanks (T-406 and T-501). Tank T-406 was closed in 2003. The investigation and cleanup of hazardous waste and constituents will be done when the Facility installs new tanks.
9. Former Processing Area: This area currently has operating storage tank V-511, V-512 and V-513 for used oil, and used to have processing equipment.

In summary:

SWMU-1 – Western Tank Farm: This tank farm contained seven tanks. Two tanks, T-301 and T-302, were removed in 1999. Remaining five tanks, T-401 through T-405, were previously regulated and have been closed in 2003 per approved closure plan.

SWMU-2 – South-western Tank Farm: This tank farm contained six tanks. Two tanks, T-21A and T-204 were removed in 1999. Remaining four tanks, T-201, T-202, T-203 and T-205, were previously regulated and closed in 2003 per approved closure plan.

SWMU-3 – Southern Tank Farm: This tank farm contained twelve tanks. Tank FRP-1 was removed in 1999. Three tanks, T-206, T-351, and T-352, were previously regulated and closed in 2003 per approved closure plan. Two tanks, T-101 and T-102 are not regulated. DTSC has determined that the investigation and cleanup of hazardous waste and waste constituents from the six tanks, T-451 through T-454, T-651 and T-652, previously regulated, will be done as part of the closure activities when the Facility installs new tanks.

SWMU-4 – Tank Farm 551: Tank Farm 551 is located in the southern half of the facility, east of the Southern Tank Farm. Tank T-551 was previously regulated and closed in 2003 per approved closure plan.

SWMU-5 – Tank Farm 501: This tank farm contained two tanks. Tank T-406 was previously regulated and closed in 2003 per approved closure plan. DTSC has determined that the investigation and cleanup of hazardous waste and waste constituents from the Tank T-501 will be done as part of the closure activities when the Facility installs new tanks.

5. RCRA FACILITY INVESTIGATION

The RCRA Facility Investigation (RFI) at AEI was conducted in several phases from 1996 to 2004.

To facilitate this approach, an agreement was reached with DTSC to investigate the facility on an iterative basis, wherein the findings from each stage of exploration were integrated into the planning for subsequent phases, thereby enhancing the quality of data acquisition and eliminating unnecessary or redundant exploration activities. The following phases of exploration comprise the RFI:

- Phase I-A Acquisition of regional data.
- Phase I-B Definition of the site lithologic model and exploration of AOC-3.
- Phase II Facility-wide soil vapor survey
- Phase III Exploration of the West Tank Farm (SWMU-1), Southwest Tank Farm (SWMU-2) and Area of Concern AOC-1. The RFI Phase III Report concluded that no further investigation is required for SWMU-1, SWMU-2, AOC-1 and AOC-3. Further investigation is required for SWMU-3, SWMU-4, SWMU-5 and AOC-2 locations. DTSC approved the RFI Phase III in August 2003.
- Phase IV-A Exploration of the Drum Storage (Pad), two former underground storage tank locations and Area of Concern AOC-2.
- Phase IV-B Exploration of key sumps, collector boxes, trenches and underground pipelines.

5.1 Groundwater:

As part of Phase I-A exploration, research of public records determined that the regional depth to groundwater beneath the facility was 400+ feet below ground surface. During Phase I-B exploration, four continuous cored borings were drilled to approximate depths of 100 feet each. All four borings revealed no evidence of free water. Those findings combined with the subsequent confirmation that the migration of contaminant discharges beneath the facility does not exceed a depth of 60 feet excluded groundwater as a receptor of concern. Accordingly, the investigation of groundwater conditions at the AEI site was terminated following Phase I-B exploration.

5.2 Vapor-Phase Contamination

A facility-wide vapor survey was completed in July 2002 to assess the presence and significance of possible vapor-phase contamination beneath the site. No significant soil gas presence was detected. As a result, no follow-up vapor investigations were required to complete the RFI.

5.3. Criteria for Identifying the Presence of Contamination

Contaminants found in soil included petroleum hydrocarbons, volatile organics (toluene, xylene, and ethyl benzene), oil and grease.

Used oil was the one significant chemical of concern. For the purposes of identifying the presence of used oil in the subsurface, it was agreed that EPA Method 418.1 Total Recoverable Petroleum Hydrocarbons (TRPH) was the appropriate analytical procedure and that a minimum threshold value of 250 mg/kg would screen out false positives from naturally occurring organics.

5.4 Soil Sampling

Soil borings were required to continue until two consecutive samples were analyzed at less than 250 mg/kg TRPH.

5.5. RFI Investigation Findings

In addition to the investigation and sampling completed during the 2003 closure activities, AEI has completed the following investigations:

Area of Concern, AOC-1

As shown on Figure 3, Area of Concern AOC-1 was located near the southwest corner of the operational portion of the site and is generally defined as the confluence of surface drainage from the surrounding Facility. In particular, a former drain sump located at the southwest corner of AOC-1 was the focal point to which surface runoff was directed at a time when the site was unpaved. No physical evidence of waste oil presence was observed, and the EPA Method 418.1 soil test findings were all non-detected to the depth of exploration.

Area of Concern, AOC-2

Area of Concern AOC-2 was designated in the RCRA Facility Assessment as the former location of petroleum hydrocarbon-contaminated soil stockpiles for a number of years along the east side of the property. A portion of the soil pile was removed and transported to an offsite permitted disposal facility; the remaining approximately 3,000 tons of soil pile was ultimately recycled into asphalt concrete pavement. Collectively, the prior data revealed nothing of significance except in Boring-2. AEI drilled three soil borings, in the proximity of B-2, to depths of 30 feet below grade. The three borings generated a total of 18 samples that were analyzed. All samples were non-detected for TRPH and, as such, no further characterization testing was conducted.

Area of Concern, AOC-3

Area of Concern AOC-3 was located offsite, to the south and west of the subject property. It comprised an unpaved, near-level landform within the Southern California Rail Authority's right-of-way, that is partially covered with weeds, brush and a scattered number of trees. DTSC identified AOC-3 because one or more reported discharges of storm water runoff from AEI had entered into this area and potentially impacted the underlying soil. A very low level of total hydrocarbon was detected by EPA Method 418.1 in the near-surface soil paralleling the railroad tracks in AOC-3. Plant roots were visible in the near-surface earth materials to a depth of at least 18 inches. Since that naturally occurring organic matter in soil samples is known to be detected by EPA Method 418.1, and the absence of discoloration or odor associated with waste oil presence, it was concluded that total hydrocarbon findings reflected natural conditions in soil. The second finding was the presence of three aromatic hydrocarbons, commonly associated with gasoline. These constituents were detected at concentrations that were below Maximum Contaminant Levels (MCLs) for drinking water. These aromatic hydrocarbons, however, did not trail backwards to the AEI. It was concluded that AEI was not the source of the aromatic hydrocarbons and no further assessment was deemed necessary for soil. Lead was discovered in one of the five soil samples at a concentration above the residential PRG at three feet depth. Samples were collected as deep as 10 feet.

4.6. Supplemental Investigation

During the course of the RFI, DTSC identified several areas of interest within the AEI facility that had not been addressed in the RFA. Each area of interest is described as follows:

Drum Storage (Pad):

The Drum Storage (Pad), located as shown on Figure 3, consists of a bermed concrete slab utilized for temporary storage of drummed wastes awaiting transfer to other facilities. A concrete core was drilled from the slab. Soil samples were collected at slab subgrade, at depths of 3 feet, 5 feet and 10 feet. All four samples were none detected for EPA Method 418.1 TRPH. It was concluded that waste discharges had not occurred beneath the Drum Storage (Pad).

Former Underground Storage Tanks (USTs):

Two 10,000-gallon underground storage tanks were removed from the facility in 1991. The westerly UST stored light ends generated by pre-AEI waste oil processing. The easterly UST contained waste oil spillage collected on the concrete floor of the pre-AEI processing area. Drilling and soil sampling through the footprint of the former easterly UST to a depth of 60 feet revealed evidence of waste oil discharges to a maximum depth of 35 feet below ground surface, but no findings of contamination below depth 35

feet. Drilling and soil sampling through the footprint of the former westerly UST encountered no evidence of contamination to a depth of 60 feet.

Underground Pipelines:

Two relatively short underground pipelines were identified outside of the tank farms. One of the pipelines was in the #3 Rack Loading Area, while the other was in the #2 Rack Loading Area. Soil samples were collected at depths of 1, 3, 5, and 10 feet. The soil sample from depth of 1 foot contained TRPH at 470 mg/kg; the remaining three samples were below the TRPH threshold of 250 mg/kg. Based on these four soil samples, no evidence of significant contamination migration at depth 3 feet and below was detected.

Sumps, Collectors Boxes and Trenches:

During the surveying of subgrade structures at the AEI facility, a total of 24 sumps, collector boxes and trenches were located. The exploratory drilling and soil sampling yielded no findings of concern.

4.7. Final RCRA Facility Investigation Report

In summary, soil samples were collected from 58 locations between 1989 and 2004 at depths ranging from 0.5 to 100 feet bgs. From these locations, seventy-six samples were analyzed for volatile organic compounds (VOCs), thirty-three samples were analyzed for semi volatiles, sixty-eight samples were analyzed for PCBs, and ninety-nine samples were analyzed for heavy metals, and forty-one samples were analyzed for benzene, toluene, ethyl benzene and xylenes (BTEX).

Chemical analysis reported trace amounts of volatile organic chemicals were found in soil and soil gas samples, which were likely from gasoline or solvents in used oil. The only semi volatile chemicals detected in soil were two polychlorinated biphenyls (PCBs), Aroclor 1254 and Aroclor 1260, eight polynuclear aromatic hydrocarbons (PAHs), and benzidine, also in trace amounts. Metals such as lead, arsenic, chromium, and copper were detected. For lead, the highest concentration was 1,040 ppm. Only two out of 50 samples exceeded the USEPA residential preliminary remedial goal (PRG) of 400 ppm and industrial PRG of 800 ppm. The maximum concentration of arsenic was found at 2.99 ppm, above the residential PRG value of 0.39 ppm and industrial PRG of 1.6 ppm, but less than the background value of 21 ppm. The maximum concentration of chromium was 76 ppm, above the residential PRG of 30 ppm and industrial PRG of 64 ppm. The maximum concentration of copper was 99 ppm, below the residential PRG value of 3,100 ppm and industrial PRG at 41,000 ppm.

Thirty-nine soil gas samples were collected from 20 locations in 2002 and analyzed for volatile chemicals. Twenty-seven samples were collected from 7 feet bgs, five samples were collected from 13-15 feet bgs, and seven samples were collected from 20-25 feet bgs.

AEI submitted "Final Report, RCRA Facility Investigation", dated July 25, 2005. On March 29, 2007, DTSC determined that the July 25, 2005 RFI Report is technically complete.

Once the permit appeal decision is made, AEI will modify the facility layout (Figure 5) including: 1) relocating Tanks T-1001, T-1002, T-1003, T-1004 and T-1005 from the current location to the New Tank Farm; 2) removing Tanks T-451, T-452, T-453, T-454, T-651 and T-652 from the SWMU-3 and installing new tanks in the New Tank Farm; 3) removing Tank T-501 from the SWMU-5 and installing a new tank in the New Tank Farm. See Table 1 for the tank inventory.

6. HUMAN HEALTH RISK ASSESSMENT

DTSC reviewed and made comments on AEI's Human Health Risk Assessment (HRA) which was dated April 2005. On November 22, 2005, AEI submitted revised Appendix G to the Human Health Risk Assessment.

The HRA was conducted by Brown and Caldwell, a consultant. A site conceptual model was constructed reflecting the potential receptors through release mechanisms, potential pathways, and exposure routes. The primary migration pathways were determined to be direct contact with soils for outdoor onsite workers, migration of soil vapors and exposure to indoor office workers and offsite residents.

The source of hazardous waste and constituents releases has been used oil. As mentioned earlier, the chemical of concerns are four groups, namely:

Petroleum hydrocarbons as total petroleum hydrocarbons (TPH)
 Metals: Arsenic, cadmium, chromium, lead, and copper
 Aromatic Hydrocarbons: toluene, xylenes, and ethyl benzene
 Oil and Grease

Data from the organic soil vapor survey, soil matrix investigations, and historical data previously collected from these areas were assessed and used in conducting the HRA. The maximum soil concentration from 0-10 feet below ground surface (bgs) was used as the EPC (exposure point concentration) for exposures to soil and the maximum soil gas concentration, regardless of depth, was used as the EPC for exposure to indoor and outdoor air. Based on the analysis of these data, the carcinogenic risk was estimated for the office worker and outdoor construction worker. The exposure scenarios and calculated risks are summarized in the following table:

	Onsite Office Worker	Onsite Outdoor Construction Worker				
	Inhalation of Vapors	Inhalation of Vapors	Inhalation of particulate from soil	Ingestion of soil	Dermal Contact	Total
Intake	0.83 m ³ /h	0.83 m ³ /h	0.83 m ³ /h	330 mg/d	Surface area: 5800 cm ² /d	
Exposure time	8 hour per day	8	8			
Exposure frequency	250 days per year	20	20	20	20	
Exposure Duration	25 years	7	7	7	7	
Body weight	70 kilogram	70	70	70	70	
Risk	6×10 ⁻⁷	2×10 ⁻⁷	2×10 ⁻⁶	5×10 ⁻⁶	4×10 ⁻⁶	1×10 ⁻⁵
Hazard Quotient	0.02	0.02	0.1	0.05	0.03	0.2

In summary, for the office worker exposure scenario, the total Cal/EPA RME (reasonable maximum exposure) cancer risk is 6×10^{-7} for inhalation of indoor air. This risk level, based on the maximum concentration found in any soil gas sample, is considered negligible.

For the outdoor construction worker exposure scenario, Cal/EPA RME cancer risk is 1×10^{-5} for all pathways based on the maximum soil and soil gas concentrations found in any sample. This risk is within the range of acceptable risks (1×10^{-4} - 1×10^{-6}) often applied to industrial settings.

For non-cancer compounds, the HI (Hazard Index) was calculated. The HRA used the maximum concentration of the metals found in the samples: arsenic (2.99 mg/kg), chromium (76 mg/kg), and copper (99 mg/kg). Lead however, was not included in the risk assessment. It is because that although the highest lead concentration was found at 1,040 ppm, above the industrial PRG of 800 ppm; forty-eight (48) out of 50 samples were below the USEPA residential PRG of 400 ppm.

The RME HI values for the office worker and outdoor construction worker exposure scenarios are 0.02 and 0.2, respectively, based on the maximum concentration in any sample. Hazard indices, 0.02 and 0.2, are acceptable because that they are below the acceptable level of 1.

The HRA concluded that Cal/EPA RME cancer risk and non-cancer hazard values are within the risk management range for industrial workers.

The result of this risk assessment also demonstrates that the soil vapor carcinogenic risk to off-site residents would be well under 1×10^{-6} . It is because that the air concentration would be substantially lower at the point of offsite residential exposure given that the risk for onsite workers is based on the maximum concentration found in any sample and that the dispersion in air will lower the concentration as the vapors move offsite.

On March 29, 2007, DTSC determined that the November 22, 2005 Human Health Risk Assessment was technically complete.

7. CONCLUSION

The release investigation at SWMU-1, SWMU-2, AOCs 1-3 and other areas of concerns has been adequately addressed. The groundwater table, reported to be at a depth of 400 feet below the ground surface was not encountered, nor impacted by AEI site operations. Based on the tank/equipment removal activities, soil investigation, and health risk assessment, DTSC concluded that residual soil contamination from the abovementioned areas was below the industrial PRGs and did not pose any risk to the office worker and outdoor construction worker or the offsite residents. Therefore, DTSC recommends no further action at AEI at this time.

The soil investigation below SWMUs -3 through 5 which are also active hazardous waste management units will be conducted as part of tank closure activities when DTSC makes a permit appeal decision and allows AEI to install the new tank farm and close the tanks previously stationed in SWMUs-3 through 5.

8. REFERENCES

1. RCRA Facility Assessment, Petroleum Recycling Corporation, Fontana, California
EPA ID No. CAT080025711, June 1993
2. Final Report RCRA Facility Investigation Advanced Environmental, Inc. 13579
Whittram Avenue, Fontana, July 2005, Appendices A – G and Figures

Appendix A - Report of Findings, RCRA Facility Investigation, Phase I-A Regional
Subsurface Data and Revised Phase I-B Work Plan

Appendix B - Report of Findings, RCRA Facility Investigation, Phase I-B Delineation
of Site Lithology and Assessment of Area of Concern AOC-3

Appendix C - Report of Findings, RCRA Facility Investigation, Phase II Soil Vapor
Survey

Appendix D - Report of Findings, RCRA Facility Investigation, Phase III Exploration,
West and Southwest Tank Farms and Area of Concern AOC-1

Appendix E - Report of Findings, RCRA Facility Investigation, Phase IV-A
Exploration, Drum Storage Area, Former USTs and Area of Concern AOC-2

Appendix F - Report of Findings, RCRA Facility Investigation, Phase IV-B
Exploration

Appendix G - Health Risk Assessment, Advanced Environmental Inc., 13579
Whittram Avenue, Fontana, California

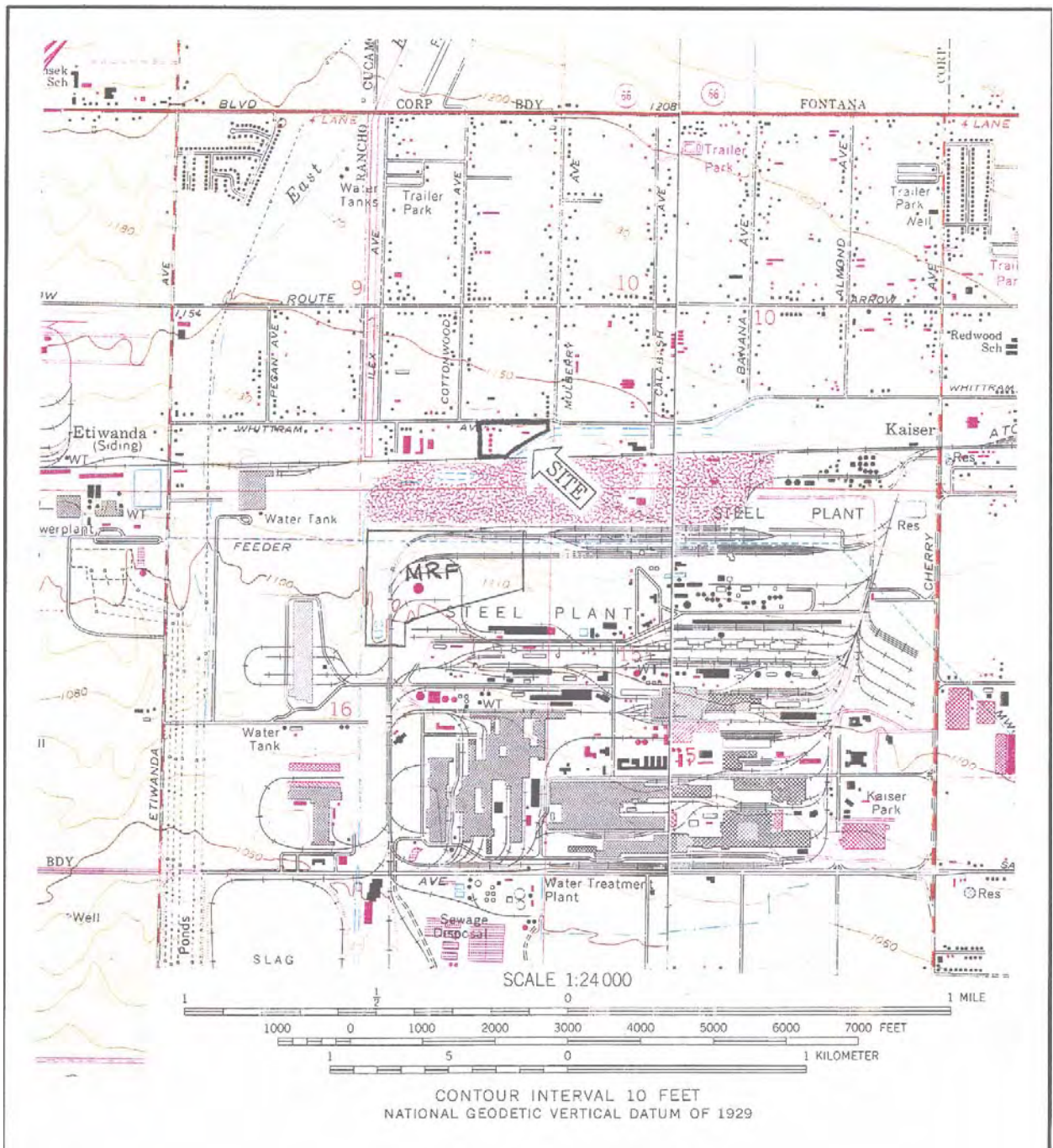


Figure 1 - Site Location Map

Corrective Action Process

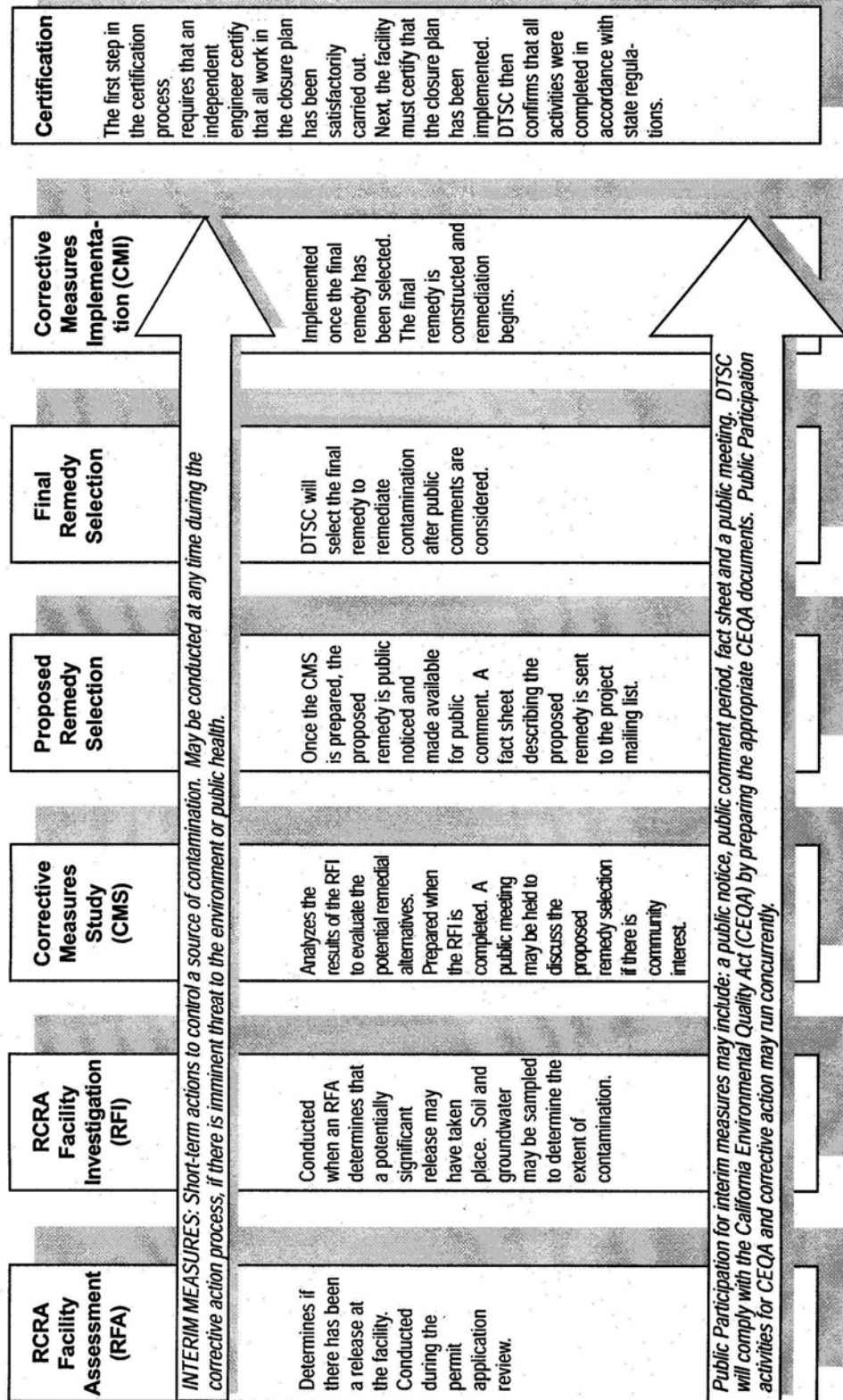


Figure 2 - Corrective Action Process

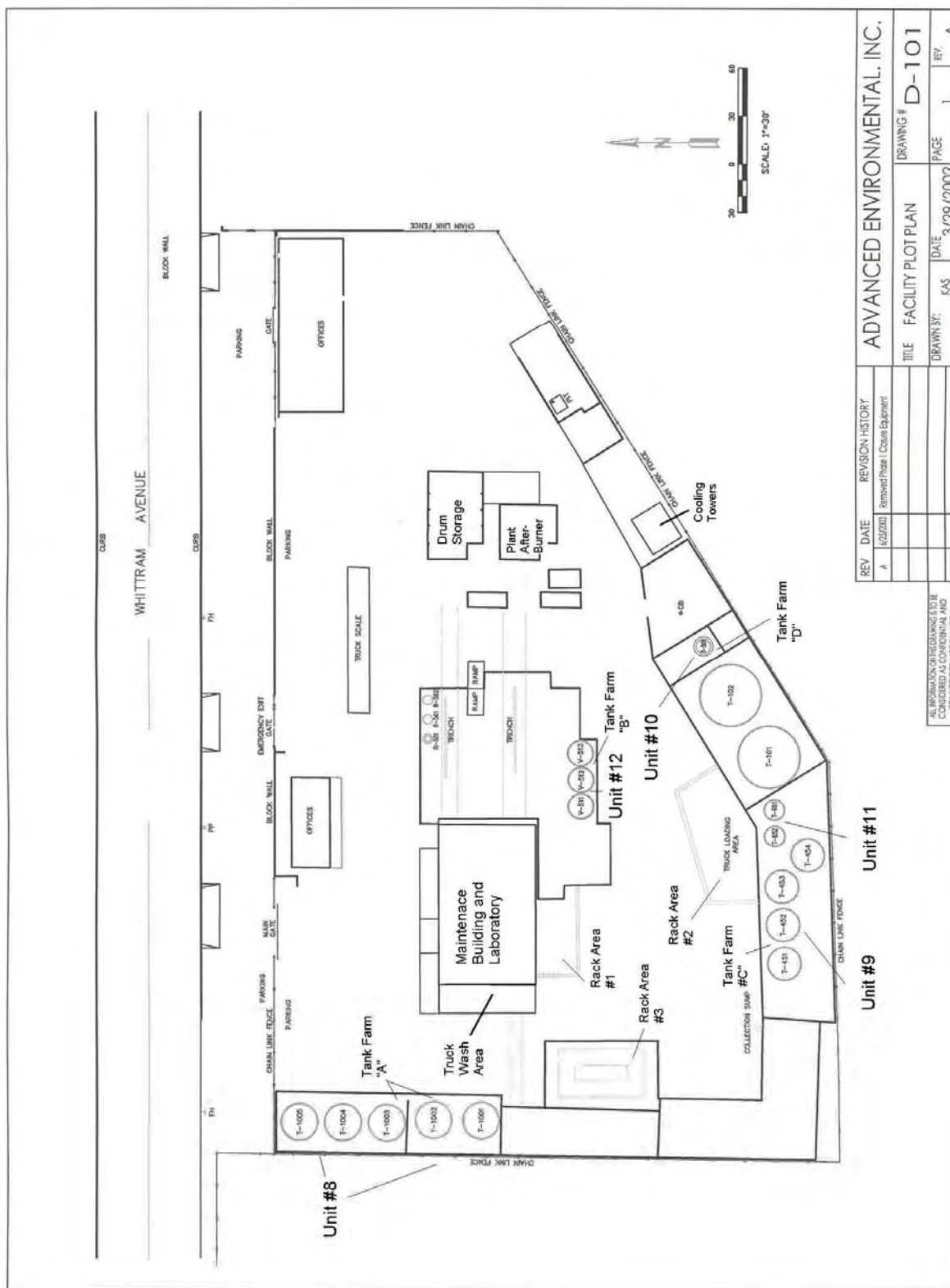


Figure 4 - Existing Facility Plot Plan

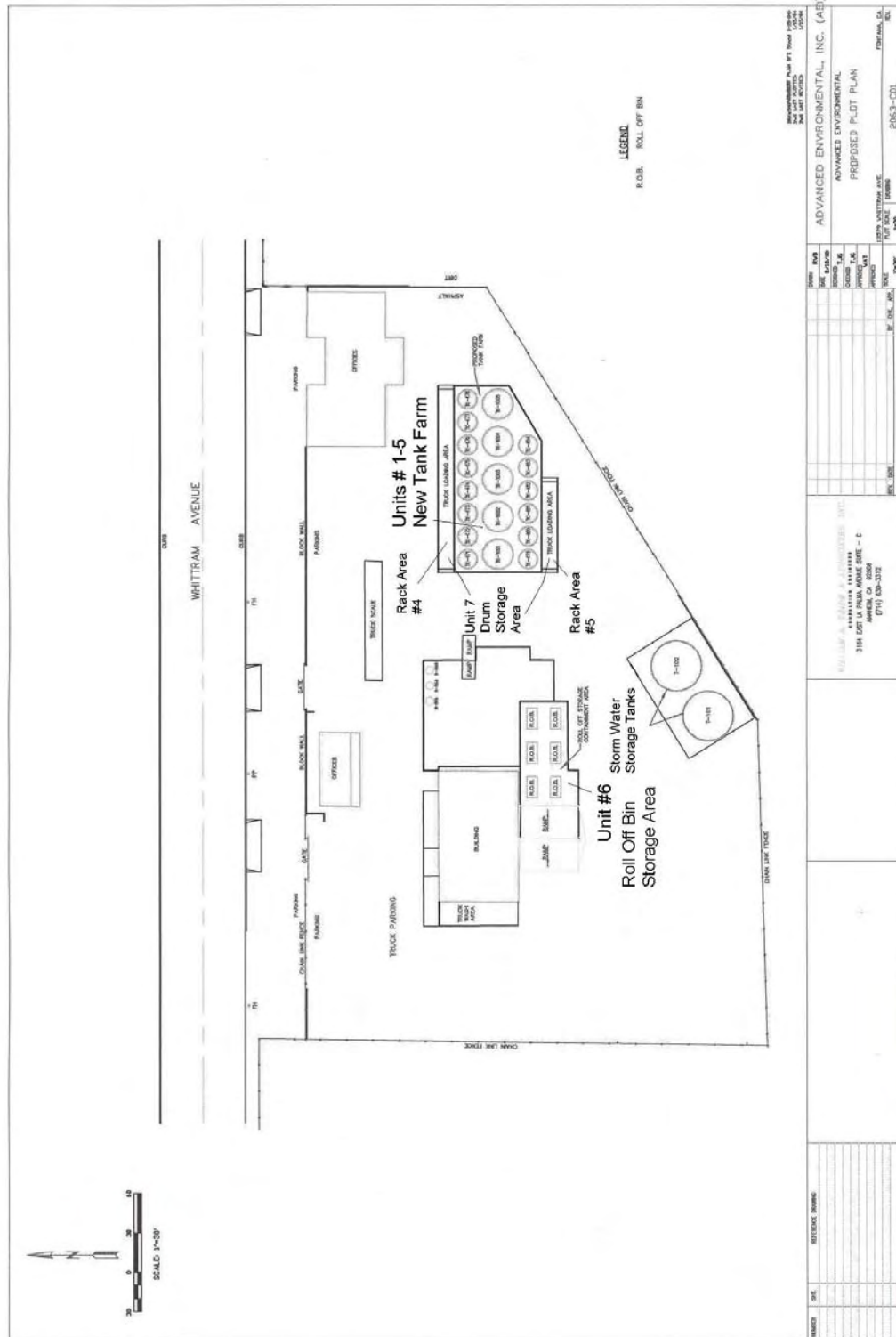


Figure 5 - Proposed Facility Plot Plan

Table 1 – AEI Tank and Structures Status

Tank no	Description	Comments
FRP-1	STF, SWMU-3	Can be certified closed
R-621	Processing Area (4,653 gallons)	Can be certified closed
R-631	Processing Area (4,653 gallons)	Can be certified closed
R-641	Processing Area (4,653 gallons)	Can be certified closed
S-511	Processing Area (4,800 gallons)	Can be certified closed
S-521	Processing Area	Can be certified closed
S-531	Processing Area	Can be certified closed
Structure #01	2" & 3" pipe and valves N of R-621	Can be certified closed
Structure #02	2" & 3" pipe and valves S of V-521	Can be certified closed
Structure #03	2" & 3" pipe and valves S of V-531	Can be certified closed
Structure #04	2", 3" & 4" pipe and valves N of V-521	Can be certified closed
Structure #05	1", 2" & 3" pipe and valves N of R-641	Can be certified closed
Structure #06	2" & 3" pipe and valves N of V-512	Can be certified closed
Structure #07	1-1/2" pipe and valves N of V-511 & E of S-511	Can be certified closed
Structure #08	1-1/2" and 2" pipe and valves N of V-511	Can be certified closed
Structure #12	Pipe overhead N of R-641	Can be certified closed
Structure #13	3" vapor recovery pipe NW of V-511 & E of S-511	Can be certified closed
Structure #14	3", 4" & 8" pipe N of R-631	Can be certified closed
Structure #15	2" & 3" pipe N of R-631	Can be certified closed
Structure #16	3" pipe W of R-641	Can be certified closed
Structure #17	2" & 3" pipe, and exchanger N of R-631	Can be certified closed
Structure #18	2" & 3" pipe W of S-511	Can be certified closed
Structure #19	2", 3" & 4" pipe and valves SW of R-551	Can be certified closed
Structure #20	3", 4" & 8" pipe and valves NW of R-621	Can be certified closed
Structure #21	1" & 2" pipe N of V-541	Can be certified closed
Structure #22	2", 3" & 4" pipe N of Tanks T-451 thru T-453	Can be certified closed
Structure #23	2", 3" & 4" pipe N of Tanks T-453 & T-651	Can be certified closed
Structure #24	2" pipe & valves S of R-551	Can be certified closed
Structure #25	6" & 8" pipe E of R-621	Can be certified closed
Structure #26	3" vapor recovery pipe NW of Tanks T-101 & T-102	Can be certified closed
Structure #27	2", 4" & 8" pipe S of R-561	Can be certified closed
Structure #28	4", 6" & 8" pipe S of R-561	Can be certified closed
Structure #29	3" pipe on top of V-511 thru V-513	Can be certified closed
Structure #30	4" pipe E of V-513	Can be certified closed
Structure #31	3" & 4" pipe N & W of Tank T-451	Can be certified closed
Structure #32	2" & 3" pipe NE of V-513	Can be certified closed
Structure #33	1/2" & 1" pipe N of V-511	Can be certified closed
Structure #34	Heat Exchanger (#C) NE of V-513	Can be certified closed
Structure #35	Heat Exchanger (#B) NE of V-513	Can be certified closed
Structure #36	Heat Exchanger E of V-513	Can be certified closed
Structure #37	2", 3" & 4" pipe E of V-513	Can be certified closed
Structure #38	2" & 3" pipe S of Tank 651	Can be certified closed
Structure #39	2" & 3" pipe in overhead pipe bridge N of T-406	Can be certified closed
Structure #40	3" pipe north-central end of pipe bridge N of T-406	Can be certified closed
Structure #41	3" pipe E of R-641	Can be certified closed
Structure #42	2" & 3" pipe SW of Heater H-741	Can be certified closed
Structure #43	2" & 3" pipe N of Heater H-721	Can be certified closed

Tank no	Description	Comments
Structure #44	1-1/2" pipe NE of V-513	Can be certified closed
Structure #45	2" & 3" pipe N of V-511	Can be certified closed
Structure #46	2" & 3" pipe S of R-562	Can be certified closed
Structure #47	Filter SE of R-551	Can be certified closed
Structure #48	Sample Box S of R-561	Can be certified closed
Structure #49	Sample Box SW of R-562	Can be certified closed
Structure #50	2" pipe in passing through warehouse Building	Can be certified closed
Structure #51	2" pipe S of V-511, V-512 & V-513	Can be certified closed
T-201	SWTF, SWMU-2 (40,763 gallons)	Can be certified closed
T-202	SWTF, SWMU-2 (40,763 gallons)	Can be certified closed
T-203	SWTF, SWMU-2 (40,763 gallons)	Can be certified closed
T-204	SWTF, SWMU-2	Can be certified closed
T-205	SWTF, SWMU-2 (40,763 gallons)	Can be certified closed
T-206	STF, SWMU-3 (40,763 gallons)	Can be certified closed
T-21A	SWTF, SWMU-2	Can be certified closed
T-23801	Processing Area (9,888 gallons)	Can be certified closed
T-23802	Processing Area (9,888 gallons)	Can be certified closed
T-23803	Main Area	Can be certified closed
T-23804	Main Area	Can be certified closed
T-301	WTF, SWMU-1	Can be certified closed
T-302	WTF, SWMU-1	Can be certified closed
T-351	STF, SWMU-3 (19,830 gallons)	Can be certified closed
T-352	STF, SWMU-3 (19,830 gallons)	Can be certified closed
T-401	WTF, SWMU-1 (19,830 gallons)	Can be certified closed
T-402	WTF, SWMU-1 (19,830 gallons)	Can be certified closed
T-403	WTF, SWMU-1 (19,830 gallons)	Can be certified closed
T-404	WTF, SWMU-1 (19,830 gallons)	Can be certified closed
T-405	WTF, SWMU-1 (19,830 gallons)	Can be certified closed
T-406	TF501, SWMU-5 (16,514 gallons)	Can be certified closed
T-551	TF551, SWMU-4 (21,000 gallons)	Can be certified closed
T-701	Used Oil Storage Tank, Maintenance	Can be certified closed
V-514/VP4	Processing Area (250 gallons)	Can be certified closed
V-521	Processing Area (250 gallons)	Can be certified closed
V-531	Structure #11 (250 gallons)	Can be certified closed
V-532/VP-3	RTI Vessel NE of R-541 (250 gallons)	Can be certified closed
V-541/VP-1	RTI System Vessel NW of R-541(1070 gallons)	Can be certified closed
V-542/VP-2	RTI Vessel N of R-541 (250 gallons)	Can be certified closed
V-551	Processing Area (1070 gallons)	Can be certified closed
WWTSkid	Main Area	Can be certified closed
R-551	Diesel Fuel Tank	Operating
R-561	Diesel Fuel Tank	Operating
R-562	Diesel Fuel Tank	Operating
T-101	STF, SWMU-3, Stormwater	Operating
T-102	STF, SWMU-3, Stormwater	Operating
T-702	Maintenance, not regulated	Operating
T-1001	NWTF, Used Oil Tank, Unit-08 (39,380 gallons)	pending closure
T-1002	NWTF, Used Oil Tank, Unit-08 (39,380 gallons)	pending closure
T-1003	NWTF, Used Oil Tank, Unit-08 (39,380 gallons)	pending closure
T-1004	NWTF, Used Oil Tank, Unit-08 (39,380 gallons)	pending closure
T-1005	NWTF, Used Oil Tank, Unit-08 (39,380 gallons)	pending closure
T-451	STF, SWMU-3, Waste oil, Fuel Oil, Unit-09 (23,940 gallons)	pending closure
T-452	STF, SWMU-3, Waste Oil (receiving), Unit-09	pending closure

Tank no	Description	Comments
	(23,940 gallons)	
T-453	STF, SWMU-3, Waste Oil, Diesel, Unit-09 (23,940 gallons)	pending closure
T-454	STF, SWMU-3, Waste Oil (receiving), Unit-09 (23,940 gallons)	pending closure
T-501	TF501, SWMU-5, Used Antifreeze, Unit-10 (11,000 gallons)	pending closure
T-651	STF, SWMU-3, Oily water, Unit-11 (18,480 gallons)	pending closure
T-652	STF, SWMU-3, Oily water, Unit-11 (18,480 gallons)	pending closure
V-511	Used Oil Tank, Unit-12 (28,350 gallons)	pending closure
V-512	Used Oil Tank, Unit-12 (28,350 gallons)	pending closure
V-513	Used Oil Tank, Unit-12 (28,350 gallons)	pending closure